

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-98 (canceled)

Claim 99 (currently amended): High performance filter media comprising nanofibers of diameter less than 1 μm incorporated and processed into internal structure of a filter medium dominantly composed of coarse fibers of diameter greater than 1 μm , said filter media having distally opposite upstream and downstream faces normal to flow therethrough and
5 defining a single layer filter media thickness therebetween, said internal structure incorporating between said faces and within said single layer at least one of the following macrostructures, defined as viewed at magnification of 5 to 50 X, in combination with at least one of the following microstructures, defined as viewed at magnification of 50 to 500 X,

10 macrostructure A wherein said nanofibers are distributed uniformly throughout said filter media and within said single layer,

 macrostructure B wherein said nanofibers are distributed unevenly in bundles providing pockets of nanofibers in a matrix of coarse fibers all within said single layer,

15 macrostructure C wherein said nanofibers are concentrated at one of said faces and within said single layer,

 microstructure 1 wherein said filter media has a nanofiber/coarse fiber interface wherein said nanofibers form bridges across pores between said coarse fibers all within said single layer,

20 microstructure 2 wherein said filter media has a nanofiber/coarse fiber interface wherein said nanofibers substantially cling onto said coarse fibers all within said single layer,

microstructure 3 wherein said filter media has a nanofiber/coarse fiber interface wherein there is no significant bridging of nanofibers across said pores between said coarse fibers and no significant clinging of said nanofibers onto said coarse fibers, and
25 instead said nanofibers clump together all within said single layer, and
~~comprising a trimodal distribution of fiber diameter, all in said single layer, comprising a first set of fibers in the diameter range 50 to 500 nm, a second set of fibers in the diameter range 1 to 5 μ m, and a third set of fibers in the diameter range 10 to 50 μ m~~ wherein said nanofibers have different adsorption properties than said coarse fibers.

Claims 100-101 (canceled)

Claim 102 (currently amended): High performance filter media comprising nanofibers of diameter less than 1 μ m incorporated and processed into internal structure of a filter medium dominantly composed of coarse fibers of diameter greater than 1 μ m, said filter media having distally opposite upstream and downstream faces normal to flow therethrough and
5 defining a single layer filter media thickness therebetween, said internal structure incorporating between said faces and within said single layer at least one of the following macrostructures, defined as viewed at magnification of 5 to 50 X, in combination with at least one of the following microstructures, defined as viewed at magnification of 50 to 500 X,

10 macrostructure A wherein said nanofibers are distributed uniformly throughout said filter media and within said single layer,

macrostructure B wherein said nanofibers are distributed unevenly in bundles providing pockets of nanofibers in a matrix of coarse fibers all within said single layer,

15 macrostructure C wherein said nanofibers are concentrated at one of said faces and within said single layer,

microstructure 1 wherein said filter media has a nanofiber/coarse fiber interface wherein said nanofibers form bridges across pores between said coarse fibers all within said single layer,

20 microstructure 2 wherein said filter media has a nanofiber/coarse fiber interface wherein said nanofibers substantially cling onto said coarse fibers all within said single layer,

microstructure 3 wherein said filter media has a nanofiber/coarse fiber interface wherein there is no significant bridging of nanofibers across said pores between said coarse fibers and no significant clinging of said nanofibers onto said coarse fibers, and
25 instead said nanofibers clump together all within said single layer,

wherein-in combination:

~~said nanofibers are selected from the group consisting of: polymeric materials; ceramic materials; acrylic; nylon; polyvinyl alcohol; polymeric halocarbon; polyester; polyaramid; polyphenylsulfide; cellulose; titania; glass; alumina; and silica; and~~

30 ~~said coarse fibers are selected from the group consisting of: polymeric materials; ceramic materials; polyvinyl alcohol; cellulose; acrylic; polyester; polyaramid; titania; glass; silica; nylon; polyphenylsulfide; polymeric halocarbon; and alumina~~ said nanofibers and coarse fibers have different wettability.

Claim 103 (new): The filter media according to claim 102 wherein said filter media captures droplets from a liquid to be filtered, and wherein said nanofibers are preferentially wetted by said droplets, and said coarse fibers are preferentially non-wetted by said droplets, whereby to create a capillary pressure gradient wicking droplets off said coarse fibers,
5 facilitating drainage.

Claim 104 (new): The filter media according to claim 102 wherein said filter media captures and coalesces droplets from a liquid to be filtered, and wherein said nanofibers are preferentially non-wetted by said droplets, and said coarse fibers are preferentially wetted by

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5 said droplets, whereby to create a capillary pressure gradient wicking droplets off said
nanofibers, facilitating coalescence and drainage.